

## 1541-II RAMBoard<sup>(tm)</sup> Installation

**READ THESE INSTRUCTIONS AT LEAST ONCE AND UNDERSTAND THEM FULLY BEFORE ATTEMPTING THIS MODIFICATION. NEITHER THE DISTRIBUTOR, OR THE MANUFACTURER WILL BE HELD RESPONSIBLE FOR ANY DAMAGE INCURRED IN THE INSTALLATION OR USE OF THIS PRODUCT.**

**WARNING ! :** This modification will void **ANY Warranty** now in effect on your disk drive. Proceed at your own risk.

All RAMBoards have been tested and are in proper working order before we ship them. Please remember that you will be working with static sensitive devices, so prepare a work area with this in mind (a grounding source, no rugs, etc.). Also note that the RAMBoard itself is a fragile device. The pins are easily bent and may break off if not inserted properly. If after installing the RAMBoard the test program shows a non-functioning unit, please contact us as soon as possible at the Tech Support phone number.

### **PREPARATION:**

1. Unplug all cables from the drive and turn it over so the bottom is facing up. Remove the four screws from the bottom of the case. Be sure to put them away where you'll be able to locate them later.
2. While holding both halves of the case, carefully turn the drive over so the top of the drive is facing up. Next, lift the top half of the case off and lay it aside. Carefully remove the toggle lever on the front of the drive by pulling gently out of the front cover.
3. Locate and remove the four screws securing the drive unit to the lower case half. Remove the electrical connectors at board location CN2, CN3, and CN4. For reassembly purposes, notice that pin one of each connector is marked on the PC board as well as on the connector itself. Carefully slide the drive unit back and lift out from the lower case half.

### **FINDING AND REMOVING THE ROM CHIP:**

1. Position the drive so that the front faces to your right and the rear to your left. Locate the ROM chip at board location U4. Notice that the notches on all chips are facing to the left of the drive if viewed from the rear.

**IMPORTANT: LOCATE THE CHIP AT BOARD LOCATION U5. THIS IS THE CHIP DIRECTLY TO THE REAR OF THE ROM CHIP (AT LOCATION U4). IF THIS CHIP IS IN A SOCKET, THEN PACKAGE YOUR 1541 II RAMBoard UP AND SEND IT BACK TO US AND ASK FOR THE 1541 II RAMBoard V2. ALTHOUGH RARE, WE KNOW THIS CONFIGURATION DOES EXIST.**

2. After identifying the ROM chip, remove it with a chip puller. If you don't have a chip puller, you may use a small flat-bladed pocket knife. Place the blade between the chip and the socket and rotate the blade. The chip will lift slightly at one end of the socket. Now repeat the procedure at the other end of the chip. Keep doing this until you can pull the chip straight out of the socket. Be patient! You DO NOT want to bend the pins on the chip! If you do bend the pins slightly, you may be able to straighten them, but be CAREFUL, these pins do not take well to bending.

#### **INSTALLING THE 1541-II RAMBOard:**

1. After removing the ROM chip, and before beginning the installation procedure, thoroughly inspect your 1541-II RAMBOard. The pins on the underside (Yes, there is one missing) will replace the chip just removed from the board. Carefully place the board into the empty socket, positioning it with all notches facing to the left of the drive, (looking from rear to forward). Be sure all pins line up properly. You may have to bend some of the small round brown or green capacitors down to provide clearance, so now is the time to check things out. Press the board in firmly until it fits against it's socket. Do not press too hard, notice that the circuit board does bend when pressure is applied. It will bend only so far before it breaks... So be careful!
2. Now place the ROM chip, previously removed, into the empty socket on the 1541-II RAMBOard using the same caution as before. Remember the notch placement! The notch should be facing the left of the drive just as it was before you removed it. Check for any damage (broken capacitors, etc.) or improper chip placement before going on to the next step.
3. Now that you are satisfied that the board is installed correctly, let's install the three leads with microclips. Again inspect the board and locate the 6502 chip at location U3, the 6522 at location U6 and the 6522 at location U8. Notice that these 40 pin chips are located on the left of the PC board and occur in order from drive front to drive rear. These three chips will receive one microclip each from the 1541-1I RAMBOard. The front lead (A) will connect to the front chip (6502 - location U3), the middle lead (B) to the middle chip (6522 - location U6) and the rear lead (C) to the rear chip (6522 - location U8). Secure the Clips to the following locations:

Lead A - Location U3 - Pin 24  
Lead B - Location U6 - Pin 22  
Lead C - Location U8 - Pin 25

20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

**PIN LOCATION**

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

4. Now, carefully place the drive unit back into position and replace the four screws securing it to the bottom drive case. Replace the drive unit electrical connectors at board position **CN2**, **CN3**, and **CN4**. Remember the Pin one locations on the PC board and the connectors. Finally press the toggle lever back onto it's former location at the drive front.

**TESTING AND FINAL ASSEMBLY:**

1. Before refitting the upper half of the drive case, connect the power cable and turn on the drive. If anything abnormal happens, quickly turn the drive off. Remove the drive unit and, once again, check for any visible damage or improper chip placement. If nothing abnormal happened, turn off the drive and go to the next step.
2. Connect the drive to the computer and run the test program (see below). If the program reports that the RAMBoard is not functioning properly, call the Technical Support line as soon as possible and we will try and resolve the problem. The technical support phone number is (206) 695-9648. Support is available Mon - Fri 9am-5pm Pacific Time.
3. If all checks out well with the test program, turn off the computer and drive. Remove all cables from the drive and replace the upper half of the drive case. Carefully turn the drive over and replace the four screws. Reconnect the power and serial cables and use the drive as normal.

**MEMO**

Phone Orders:  
1-800-356-1179

Tech Line:  
1-206-695-9648

*Be very careful about Clearances!*  
*The Drive motor may "Rub" on the Chips,  
So be sure everything is pushed down well.  
Also, tape down the Chip leads!*

1541 II RAMBoard

PAGE [3]

(c) 1989 CLD

SOFTWARE SUPPORT INTERNATIONAL, 2700 N.E. ANDRESEN RD. SUITE A1, VANCOUVER WA 98681

## **RAMBOard UTILITIES DISK:**

All utilities run in the 64 mode!

**RAMBOard Test Program:** The diskette that was packed along with your RAMBOard contains, among other things, an installation test program. With the RAMBOard Utilities diskette in the drive, type LOAD "RAMBOARD TEST " ,8,1 and press RETURN. At the READY prompt, type RUN and hit RETURN again. At this point, follow on screen prompts to determine if your RAMBoard is properly installed. **Please note that the 1541-II RAMBOard adds RAM to your drive at location \$8000. The Maverick 8K parameters default to \$8000, so no RAM location changes will be necessary.**

**1541 Fast Data Copiers:** With the RAMBOard Utilities diskette in the drive, type LOAD " :\* " ,8,1 and press RETURN. At the READY prompt, type RUN and hit RETURN again. You will be presented with a menu asking if you wish the single or dual drive version of the Fast Data Copier. Press the 1 or 2 key to load the appropriate copier. Once the desired copier has loaded, a quick study of the menu screen will familiarize you with the options available.

The copiers included with The RAMBOard have been designed to efficiently copy non-protected data from one diskette to another. They were not designed to handle **copy protected** programs. For that purpose, we strongly suggest the Maverick, also available from Software Support International. The Maverick software contains the parameter support for your 1571 RAMBOard. This combination of software & hardware is most powerful archiver ever developed for the Commodore 64/128.

### **LIMITED WARRANTY**

If at any time within 90 days of purchase, the RAMBOard or it's companion diskette become defective (abuse not included), you may use the blue return sheet included with your invoice to receive a replacement unit. We will repair or replace your defective RAMBOard as soon as possible. Replacements will be given at no charge, upon receipt of the defective item, postage paid.

### **The 1541-II RAMBOard**

Hardware Design :(c) Chip Level Design  
RAMBOard Test Program :(c) Chip Level Designs  
1541/71 Fast Copiers :(c) K.J.P.B.

### **Distributed By**

Software Support International  
2700 N.E. Andresen Rd. Suite #A-1  
Vancouver, Washington 98661  
Order Line : 1 (800) 356-1179  
Technical Line : (206) 695-9648